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Stability of DIII-D Wall Stabilization Discharges[1] M. OKABAYASHI, M.S. CHANCE, L.C. JOHNSON, R. HATCHER, Princeton Plasma Physics Laboratory, M.S. CHU, D.A. HUMPHREYS, R.J. LA HAYE, E.J. STRAIT, M.L. WALKER, General Atomics, A.M. GAROFALO, G.A. NAVRATIL, Columbia U., M.R. WADE, Oak Ridge National Laboratory — Resistive wall mode (RWM) feedback control has introduced a promising path for achieving high β_N regime. β_N as high as twice the no-wall β limit ($\approx 2.4\ \ell_i$) was achieved with direct feedback, or with pre-programmed error field correction based on the feedback performance. The same approach was applied to a steady state high performance AT target (no-wall β limit $\approx 4\ \ell_i$). The high β_N period was extended up to 1 s until a tearing mode reduced the stored energy. The lumped parameter model of RWM is extended to include plasma rotation through a viscosity term. The time behavior of the feedback system at these high performance will be presented along with model prediction.

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